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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,310	03/18/2004	Yuezhong Meng	1238.70071	5778

24978 7590 08/08/2006

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EXAMINER

PASTERCZYK, JAMES W

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/803,310	Applicant(s) MENG ET AL.	
	Examiner J. Pasterczyk	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/18/04</u> . | 6) <input type="checkbox"/> Other: ____. |

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1. The abstract of the disclosure is objected to because it should be amended in line with the objections and rejections to the claims noted *infra*. Correction is required. See MPEP § 608.01(b).

2. The specification is objected to because it requires extensive proofreading and editing for proper English grammar and usage. In addition, the US Patent number given at p. 4, l. 3 is clearly incorrect.

3. The examiner further notes that at p. 10, l. 9, p. 14, l. 16-17, p. 15, l. 18, and p. 16, l. 18, reference is made to “the literature” for the manner in which various layered materials are washed with acid. This literature appears to be material to the patentability of the present claims. Hence, applicants are reminded of their duty to disclose under 37 CFR 1.56, and copies of the literature references are requested by the examiner for consideration.

4. Claims 1-5 are objected to because of the following informalities: in claims 1-3 and 5, the catalyst is referred to as “intercalating”; this term would only be appropriate if during the catalytic process the reactants intercalated into the laminar structure of the support material. However, it appears that such is not the case, but instead the zinc carboxylate is intercalated into the laminar structure of the support, hence a more appropriate term would be --intercalated--.

Further in claim 1, l. 3, insert --a-- after “into”. In claim 4 the appropriate term seems to be --kaolin--.

In claim 5, l. 4, insert --the product-- after “then calcining” for clarity; in l. 6 insert --a-- before “zinc dicarboxylate”, change “strong” to --a strongly--, and change “under” to --with a--; in l. 7 change “calcinated” to --calcined--; in l. 8 insert --for-- after “intercalation” and change “the” to --a--.

Appropriate correction is required.

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5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims the catalyst is referred to as a “nano-catalyst”, yet no data or other evidence is presented in the specification that would indicate that dimensions on the order of nanometers are important or critical to the definition or functioning of the catalyst, hence it is urged that the superfluous prefix “nano” simply be deleted.

In claim 2, “said inorganic matrix” lacks antecedent basis since claim 1 does not recite that the “matrix with a layered structure” is “inorganic”.

In claim 3, l. 2, change “dicarboxylates are” to --dicarboxylate is--, and in l. 3 change the first “and” to a comma, delete “the” and make “mixture” plural for proper closed Markush language.

In claim 4 “said inorganic matrices” lacks antecedent basis, and in l. 2 insert --consisting-- after “group”.

In claim 5, l. 4, “the layered matrix” lacks antecedent basis, it is not clear with what this matrix is associated; in l. 7 “calcinated (sic) acidic matrix” lacks antecedent basis (if it is the product of the previous step, this should be recited in the previous step), and “the reaction system” lacks antecedent basis; in l. 9 it is not clear what is meant by “improving the crystal”, and in l. 10 it is not recited what is refluxed in the less polar solvent or what this solvent is less polar than.

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In claim 6, l. 1, change "solvents are" to --solvent is-- for proper closed Markush language, and the last clause about adjusting the pH fails to further limit the claim and thus should be canceled.

In claim 7 change "solvents are" to --solvent is--.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo et al., USP 6,593,267 (hereafter referred to as Kuo).

Kuo discloses the invention substantially as claimed (col. 13, l. 23-49; col. 14, l. 55 to col. 15, l. 14; col. 15, l. 50-59; col. 16, l. 13-21; col. 17, l. 54-56).

Kuo lacks explicit disclosure that the catalyst is capable of copolymerizing carbon dioxide and epoxides, or that the zinc component is intercalated within the layered matrix.

However, given the range of materials that may be used as the support, intercalation would be a conventional means of incorporating the zinc component into the support, and once such a composition were made it would naturally be capable of copolymerizing carbon dioxide and epoxides.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Kuo with a reasonable expectation of obtaining a highly-useful catalyst and method of making it with the expected benefit of improved flowability and operability of the catalyst.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

AU 1755

8/4/06



J. A. LORENGO
SUPERVISORY PATENT EXAMINER